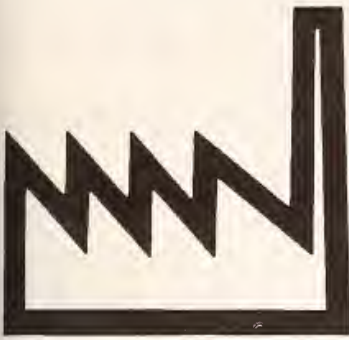


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PRELIMINARY REPORT
INDUSTRY SERIES

1987
Census of
Manufactures

MC87-I-28E(P)
Issued April 1989

PAINTS AND ALLIED PRODUCTS

Industry 2851

INTRODUCTION

This report presents preliminary statistics from the 1987 Census of Manufactures for those establishments classified in the industries listed above. These data will be superseded by a more comprehensive final paperbound report. The method of data collection and use of administrative data are discussed in detail in the appendix.

All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The definitions of these industries are the same as those used in the 1987 Standard Industrial Classification (SIC) Manual.¹

INDUSTRY 2851, PAINTS AND ALLIED PRODUCTS

In the 1987 Census of Manufactures, Industry 2851, Paints and Allied Products, had employment of 54.7 thousand. The employment figure was 1 percent above the 54.1 thousand reported in 1982. Compared with 1986, employment in 1987 decreased 2 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

¹Standard Industrial Classification Manual: 1987. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Stock No. 041-001-00314-2.

The total value of shipments for establishments classified in this industry was \$12.6 billion.

The cost of materials and services used by establishments in this industry amounted to \$6.4 billion in 1987. Data on specific materials consumed appear in table 3.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used in the tables in this publication:

-	Represents zero.
(D)	Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
(NA)	Not available.
(NC)	Not comparable.
(S)	Withheld because estimate did not meet publication standards on the basis of either the response rate or a consistency review.
(X)	Not applicable.
(Z)	Less than half the unit shown.
do	Ditto.
n.e.c.	Not elsewhere classified.
n.s.k.	Not specified by kind.
pt.	Part.
r	Revised.
SIC	Standard Industrial Classification.

Other abbreviations, such as lb, gal, yd, doz, bbl, and s tons, are used in the customary sense.

Address inquiries to Bureau of the Census, Industry Division, Washington, DC 20233, or call **David J. Gromos** (301) 763-2510.

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Table 1. Historical Statistics for the Industry: 1987 and Earlier Years

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Year¹	Companies² (no.)	All establishments³		All employees		Production workers			Value added by manufac- ture⁴ (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expend- itures (million dollars)	End-of- year inven- tories⁴ (million dollars)	Ratios	
		Total (no.)	With 20 employ- ees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						Spe- cial- ization (per- cent)	Cover- age (per- cent)
		INDUSTRY 2851, PAINTS AND ALLIED PRODUCTS													
1987 Census ----	(NA)	1 399	614	54.7	1 475.3	27.8	55.7	616.5	6 187.3	6 440.0	12 599.5	268.4	1 534.0	(NA)	(NA)
1986 ASM ----	(NA)	(NA)	(NA)	55.8	1 416.3	28.8	57.0	611.4	5 407.2	6 302.6	11 724.9	254.2	1 494.9	(NA)	(NA)
1985 ASM ----	(NA)	(NA)	(NA)	55.5	1 359.5	29.0	56.9	596.5	5 169.3	6 396.8	11 562.4	248.8	1 555.4	(NA)	(NA)
1984 ASM ----	(NA)	(NA)	(NA)	55.3	1 286.8	29.1	56.9	564.4	4 932.1	6 011.3	10 848.4	283.6	1 461.9	(NA)	(NA)
1983 ASM ----	(NA)	(NA)	(NA)	53.6	1 207.7	27.5	54.1	504.4	4 706.3	5 577.3	10 194.6	280.1	1 375.3	(NA)	(NA)
1982 Census ----	1 170	1 441	620	54.1	1 157.7	27.6	53.6	481.1	3 952.5	5 167.6	9 162.1	219.2	1 231.5	97	96
1981 ASM ----	(NA)	(NA)	(NA)	60.1	1 167.0	31.5	61.8	494.5	3 867.3	5 350.8	9 143.5	230.6	1 170.2	(NA)	(NA)
1980 ASM ----	(NA)	(NA)	(NA)	62.3	1 081.7	32.7	63.4	463.3	3 559.2	4 793.8	8 340.0	205.4	1 068.3	(NA)	(NA)
1979 ASM ----	(NA)	(NA)	(NA)	63.1	1 024.5	34.8	68.1	466.2	3 363.6	4 610.7	7 910.5	187.2	1 055.5	(NA)	(NA)
1978 ASM ----	(NA)	(NA)	(NA)	61.5	943.4	32.9	65.6	426.9	2 954.6	4 197.1	7 167.4	174.6	944.3	(NA)	(NA)
1977 Census ----	1 288	1 579	653	61.4	882.6	33.0	66.2	394.1	2 821.3	3 848.9	6 629.7	167.4	937.6	96	97
1976 ASM ----	(NA)	(NA)	(NA)	60.4	810.2	31.9	63.9	353.0	2 562.2	3 437.5	5 931.3	122.4	849.2	(NA)	(NA)
1975 ASM ----	(NA)	(NA)	(NA)	59.9	736.9	31.1	61.3	315.7	2 126.3	3 003.2	5 149.9	121.6	755.8	(NA)	(NA)
1974 ASM ----	(NA)	(NA)	(NA)	64.9	741.9	35.0	69.5	337.1	2 227.6	2 890.5	5 007.0	119.1	841.2	(NA)	(NA)
1973 ASM ----	(NA)	(NA)	(NA)	69.3	718.4	39.1	75.4	329.0	1 959.8	2 330.4	4 268.3	72.5	624.9	(NA)	(NA)
1972 Census ----	1 317	1 599	687	65.9	647.2	36.2	73.2	295.1	1 791.7	2 058.4	3 821.8	81.5	542.8	95	96

Note: Establishments of single unit companies with up to 20 employees (cutoff varied by industry) were excluded from the mail portion of the census. Data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were estimated based on administrative-record information from other agencies in conjunction with industry averages. These establishments accounted for the following percent of total value of shipments: SIC 2851, 11%.

¹In annual survey of manufactures (ASM) years, data are estimates based on a representative sample of establishments canvassed annually and may differ from results of a complete canvass of all establishments. ASM publication shows percentage standard errors. Unless otherwise noted, for data prior to 1972, see 1972 Census of Manufactures, vol. II, table 1a of the Industry chapter.

²For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

³Includes establishments with payroll at any time during year.

⁴Beginning with the 1982 Census of Manufactures, all respondents were requested to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior Censuses and annual surveys of manufactures in which respondents were permitted to value their inventories using any generally accepted accounting method. Consequently, inventories and value added by manufacture are not comparable to prior-year data.

Table 2. Product and Product Classes—Value of Shipments by All Producers: 1987 and 1982

[Includes value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text.]

1987 product code	Product	1987		1982	
		Number of companies with shipments of \$100,000 or more	Value of product shipments ¹ (million dollars)	Number of companies with shipments of \$100,000 or more	Value of product shipments ¹ (million dollars)
2851--	PAINTS AND ALLIED PRODUCTS				
	Total -----	(NA)	11 985.4	(NA)	8 506.5
28511 -- 28511 00	Architectural coatings: Architectural coatings (for additional detail, see Current Industrial Report MA-28F, Paint, Varnish, and Lacquer) -----	287	4 172.2	(NA)	3 076.3
28512 -- 28512 00	Product finishes for original equipment manufacturers (OEM), excluding marine coatings: Product finishes for original equipment manufacturers (OEM), excluding marine coatings (for additional detail, see Current Industrial Report MA- 28F, Paint, Varnish, and Lacquer) -----	269	3 755.3	(NA)	2 491.8
28513 -- 28513 00	Special purpose coatings, including all marine coatings: Special purpose coatings including all marine coatings (e.g., industrial construction and maintenance, traffic marking, transportation after market, marine, aerosol, etc.) (for additional detail, see Current Industrial Report MA-28F, Paint, Varnish, and Lacquer) -----	239	2 129.9	(NA)	1 380.7
28515 -- 28515 00	Miscellaneous allied paint products: Miscellaneous allied paint products (including paint and varnish removers, thinners, pigment dispersions, glazing compounds, etc.) (for additional detail, see Current Industrial Report MA-28F, Paint, Varnish, and Lacquer) -----	234	934.1	(NA)	801.6
28510 -- 28510 00	Paints and allied products, n.s.k. ----- Paints and allied products, n.s.k., typically for establishments with 5 employees or more (see note) -----	(NA)	993.9	(NA)	756.2
28510 02	Paints and allied products, n.s.k., typically for establishments with less than 5 employees (see note) -----	(NA)	566.2	(NA)	503.6
		(NA)	427.7	(NA)	252.6

Note: In 1987 Census of Manufactures, data for establishments of small single unit companies with up to 20 employees were estimated from administrative-record data rather than data actually collected from respondents. Employment cutoffs used for administrative records for each industry and shipments figures are included in code ending with "002". In both 1987 and 1982 Censuses of Manufactures, products not completely identified on standard forms were coded in appropriate product class (five-digit) followed by "00" or to appropriate product group code (four-digit) followed by "000".

¹Data reported by all producers, not just those with shipments of \$100,000 or more.

Table 3. Materials Consumed by Kind: 1987 and 1982

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987		1982	
		Quantity ¹	Delivered cost (million dollars)	Quantity ¹	Delivered cost (million dollars)
	INDUSTRY 2851, PAINTS AND ALLIED PRODUCTS				
	Materials, parts, containers, and supplies -----	(X)	5 842.5	(X)	4 621.6
207619	Vegetable oils ----- mil lb..	*180.6	64.3	**181.6	74.4
	Pigments:				
281611	Titanium dioxide, composite and pure (100% TiO ₂) ----- mil lb..	760.6	542.0	575.9	365.3
281602	Other inorganic pigments, including chrome colors, whiting, white and red lead, litharge, lithopone, zinc oxide, calcium carbonate precipitated, etc. -----	(X)	184.1	(X)	*147.9
286532	Organic color pigments, lakes, and toners -----	(X)	198.8	(X)	108.7
	Solvents:				
286554	Hydrocarbons (toluene, xylene, etc.) ----- mil lb..	**801.6	142.7	808.0	162.3
286907	Alcohols (butyl, ethyl, isopropyl, etc.) ----- do..	*282.3	83.0	248.9	81.2
286971	Ketones and esters (methyl ethyl ketone, ethyl acetate, etc.) ----- do..	432.9	152.2	(S)	140.0
286002	Other ----- do..	*367.8	129.8	(S)	122.2
	Plastics resins:				
282111	Alkyds ----- mil lb..	*625.0	285.1	*490.1	243.3
282112	Acrylics ----- do..	626.2	341.8	*389.7	188.0
282113	Vinyl ----- do..	*594.2	167.6	*270.9	115.2
282114	Other plastics resins ----- do..	*757.1	510.9	*294.2	262.3
291105	Petroleum thinners (naphtha) ----- mil gal..	(S)	74.7	(S)	104.8
329511	Nonmetallic minerals and earths, ground or otherwise treated (calcium carbonate, talc, silica, kaolin, mica, barite, soapstone, clay, and other clay minerals) for use as extenders -----	(X)	151.0	(X)	81.1
280008	All other organic and inorganic chemicals, n.e.c. -----	(X)	544.9	(X)	(³)
340001	Metal containers -----	(X)	378.4	(X)	328.0
970099	All other materials and components, parts, containers, and supplies -----	(X)	644.8	(X)	*1 099.3
971000	Materials, parts, containers, and supplies, n.s.k. ² -----	(X)	1 246.4	(X)	997.6

¹For some establishments, data have been estimated from central unit values which are based on quantity-cost relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

²Total cost of materials of establishments that did not report detailed materials data, including establishments that were not mailed a form.

³For 1982, material code 280008 was included with material code 970099.

APPENDIX

Scope and Coverage and Explanation of Terms

GENERAL

The 1987 Census of Manufactures is the 32nd census of manufacturing establishments conducted in the United States. For 1987, it was conducted as part of the economic censuses, which included the censuses of mineral industries, construction industries, retail and wholesale trades, service industries, selected transportation activities, and minority-owned and women-owned businesses, under authority of title 13 of the United States Code. Title 13 specifies that an economic census be conducted every 5 years to cover years ending in 2 and 7.

SCOPE AND COVERAGE

Establishment Basis of Reporting

The census of manufactures is conducted on an establishment basis. All manufacturing establishments with one paid employee or more at any time during the year are covered by the census of manufactures. Therefore, a company operating at more than one location is required to file a separate report for each location. This report excludes information for separately operated administrative offices, warehouses, garages, and other auxiliary units which service manufacturing establishments of the same company. Where these auxiliary operations are conducted at the same location as the manufacturing operation, they are usually included in the report for the operating manufacturing establishment.

Use of Administrative Records

From a universe of approximately 350,000 manufacturing establishments in the 1987 Census of Manufactures, approximately 150,000 small single-establishment companies were excused from filing reports. Selection of the small establishment nonmail cases was done on an industry-by-industry basis. A variable cutoff was used to determine those establishments for which administrative records were to be used in place of a census report. The cutoffs were selected so the administrative-record cases would account for approximately 3 percent or less of the value of shipments for the industry. These cutoffs were then adjusted so that all single-establishment companies with less than 5 employees were excluded from the mail canvass, while all establishments with more than 20 employees were included. Where establishments in the 5 to 20 employee size range were included in the mail canvass, an abbreviated census form was frequently used.

For these nonmail establishments, (and a small number of larger establishment whose reports were not received at the time the data were tabulated) data on employment, payroll, and receipts were obtained from administrative records of other government agencies rather than from census forms. The administrative-record information was then used in conjunction with industry averages to estimate the data for these establishments. The value of shipments and cost of materials were not distributed among specific products and materials but were included in the product and material "not specified by kind" (n.s.k.) categories.

EXPLANATION OF TERMS

Number of establishments and companies—A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

All employees—Includes all full-time and part-time employees on the payrolls at any time during the year. Included are all persons on paid sick leave, paid holidays, and paid vacations. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for midmonth payroll periods of March, May, August, and November.

Production workers—Includes workers up through the working-supervisor level engaged in fabricating, processing, assembling, inspecting, receiving, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial, guard services, product development, auxiliary production for plant's own use (e.g., power-plant), recordkeeping, and other closely associated services. Truckdrivers delivering ready-mixed concrete are also included in production workers.

Other employees—Includes nonproduction personnel, including those engaged in the following activities: supervision above working-supervisor level, sales (including driver/salespersons), sales delivery (truckdrivers and helpers), advertising, credit collection, installation and

servicing of own product, clerical and routine office functions, executive, purchasing, finance, legal, personnel (including cafeteria, etc.), professional, and technical employees.

Payroll—Includes the gross earnings for the “employees” defined above, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees’ Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

Production-worker hours—Covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

Cost of materials—Refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuels consumed, regardless of whether they were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or generating electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

Specific materials consumed (table 3)—In addition to the total cost of materials which every establishment was required to report, information was also collected for most manufacturing industries on the consumption of major materials used in manufacturing. These inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers’ records. Establishments consuming less than a specified amount (usually \$10,000) of a specific material were not requested to report consumption of that material separately. Also, the cost of materials for the small establishments for which administrative records were used was estimated as “not specified by kind” (n.s.k.).

Value of shipments and other receipts—Generally refers to received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all

miscellaneous receipts such as receipts for contract work performed for others, installation and repair receipts, sale of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishment from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In a few industries, the value of production or value of work completed is used instead of value of shipments. These industries are identified in the introduction and are footnoted in table 1.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, that is, including not only the direct costs of production but also a reasonable proportion of “all other costs” (including company overhead and profit).

Shipments or production of individual products (table 2)—In the 1987 census, detailed shipment information was collected for approximately 11,000 individual products. These products are identified by a seven-digit code and are grouped into approximately 1,500 classes of products, which in turn are primary to 459 four-digit industries. Data at the five-digit product-class level have been collected each year as part of the annual survey of manufactures. Information at the seven-digit level, collected for many industries in the current industrial reports program, is not included in this table.

Value added by manufacture—This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacturing, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

For those industries where value of production is collected instead of value of shipments (see footnote in table 1), value added is adjusted only for the change in work-in-process inventories between the beginning and end of the year. For those industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

Value added avoids the duplication in the figure for value of shipments which results from the use of products of some establishments as materials by others. Value

added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

Expenditures for new plant and equipment—Establishments in operation and any known plants under construction were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments and (b) new machinery and equipment used for replacement and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expenses. Data for used plant and equipment will be published in the final industry bulletin.

End-of-year inventories—Comprised of (a) finished products; (b) work-in-process; and (c) materials, supplies, fuels, etc. Beginning in 1982, respondents were asked to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior years in which respondents were permitted to value their inventories using any generally accepted accounting method.

Therefore, 1982 through 1987 data for inventories are not strictly comparable to prior-year data.

Specialization and coverage ratios—An establishment is classified in a particular industry if its shipments of primary products of the industry exceed in value its shipments of the products of any other single industry. An establishments' shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). The following ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in table 1 and data on product shipments shown in table 2.

Specialization ratio—Represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio—Represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments, wherever classified.



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